EC2x&EG9x&EM05 SMTP
AT Commands Manual

LTE Module Series

Rev. EC2x&EG9x&EM05_SMTP_AT_Commands_Manual_V1.0

Date: 2017-12-08

Status: Released

Our aim is to provide customers with timely and comprehensive service. For any assistance, please contact our company headquarters:

Quectel Wireless Solutions Co., Ltd.

7th Floor, Hongye Building, No.1801 Hongmei Road, Xuhui District, Shanghai 200233, China

Tel: +86 21 5108 6236

Email: info@quectel.com

Or our local office. For more information, please visit:

http://quectel.com/support/sales.htm

For technical support, or to report documentation errors, please visit:

http://quectel.com/support/technical.htm

Or Email to: support@quectel.com

About the Document

History

Revision	Date	Author	Description
1.0	2017-12-08	Duke XIN/ Haley HUANG	Initial

Contents

Table Index

1 Introduction

Quectel EC2x&EG9x&EM05 modules provide SMTP application interface for sending emails. This document is a reference guide to all the AT commands defined for SMTP.

This document is applicable to following Quectel modules:

- EC2x (including EC25, EC21, EC20 R2.0 and EC20 R2.1)
- EG9x (including EG91 and EG95)
- EM05

1.1. Introduction about SSL Type

There are three kinds of connections between SMTP client and SMTP server:

- Without SSL
- SSL
- STARTTLS

Some SMTP servers do not support connection without SSL, while some can support all of them. Customers can choose one kind according to the mail service provider.

These three kinds of connections can be set by <ssltype> parameter in AT+QSMTPCFG="ssltype".

1. If <ssltype> is 0, it means "without SSL". In this case, SSL function will not be used, and emails are sent with insecure connection. The port of SMTP server depends on mail service provider, and it is the port 25 usually.
2. If <ssltype> is 1, it means "SSL". In this case, emails are sent with SSL/TLS encrypted SMTP. The port of SMTP server depends on mail service provider, and it is the port 465 or 587 usually.
3. If <ssltype> is 2, it means "STARTTLS". In this case, the normal insecure connection can be upgraded to secure connection through STARTTLS function, for sending the mail data. The port of SMTP server depends on mail service provider, and it is the port 25, 465 or 587 usually.

1.2. The Process of Sending Email

As EC2x&EG9x&EM05 modules support SMTP protocol, customers can send emails easily by EC2x&EG9x&EM05 SMTP AT commands. The general process is as follows:

Step 1: Configure and activate a PDP context.
1) Configure <APN>, <username>, <password> and other parameters of a PDP context by AT+QICSGP. Please refer to *Quectel_EC2x&EG9x&EM05_TCP(IP)_AT_Commands_Manual* for details.
   If QoS settings need to be updated, configure them by AT+CGQMIN, AT+CGEQMIN, AT+CGQREQ and AT+CGEQREQ commands. For more details, please refer to *Quectel_EC25&EC21_AT_Commands_Manual, Quectel_EG9x_AT_Commands_Manual and Quectel_EM05_AT_Commands_Manual*.
2) Activate the PDP context by AT+QIACT.
3) Configure the PDP context ID for SMTP by AT+QSMTPCFG="contextid",<contextID>.

Step 2: Configure SMTP server and user account.
1) Configure SSL type by AT+QSMTPCFG="ssltype",<ssltype>. If <ssltype> is SSL or STARTTLS, customers should choose an SSL context by AT+QSMTPCFG="sslctxid",<sslctxID> and configure the <sslctxID> by AT+QSSLCFG="ciphersuite",<sslctxID>,<ciphersuites>. For more details about these commands, please refer to *Quectel_EC2x&EG9x&EM05_SSL_AT_Commands_Manual*.
2) Configure SMTP server by AT+QSMTPCFG="smtpserver",<srvaddr>,<srvport>. <srvaddr> and <srvport> parameters depend on the mail service provider.
3) Configure account information by AT+QSMTPCFG="account",<username>,<password>.
4) Configure sender information by AT+QSMTPCFG="sender",<sender_name>,<sender_email>.

Step 3: Edit the email content.
1) Configure the recipient email address by AT+QSMTPDST.
2) Configure the subject of email by AT+QSMTPSUB.
3) Configure the body of email by AT+QSMTPBODY.
4) Add attachments for the email by AT+QSMTPATT. The attachments can be RAM, UFS or SD files. And the files can be uploaded to RAM, UFS or SD card by AT+QFUPL. After sending email successfully, the file should be deleted by AT+QFDEL. For more details of these commands, please refer to *Quectel_EC2x&EG9x&EM05_FILE_AT_Commands_Manual*

Step 4: Send email.
Send the email by AT+QSMTPPUT. It will take some time to send the email depending on the total size of attachments and network status. When the sending action ends, "+QSMTPPUT: <err>,<protocol_error>" will be returned.

Step 5: Clear the email content.

AT+QSMTPCLR will clear the email content configured in **Step 3**. The attached files should be deleted by AT+QFDEL. For more details of these commands, please refer to *Quectel_EC2x&EG9x&EM05_FILE_AT_Commands_Manual*. Then repeat **Step 3** and **4**. If the SMTP server information and user information need to be changed, then **Step 2** to **Step 4** should be repeated.

If emails have not been sent for a long time, such as 30 minutes or even longer, then the PDP context should be deactivated by AT+QIDEACT=<contextID>. For more details, please refer to *Quectel_EC2x&EG9x&EM05_TCP(IP)_AT_Commands_Manual*.

1.3. Description of Data Mode

The COM port of EC2x&EG9x&EM05 modules has two working modes: AT command mode and data mode. In AT command mode, the inputted data via COM port will be treated as AT command, while in data mode, it will be treated as data.

Inputting "+++" or pulling up DTR (AT&D1 should be set first) can make the module exit from data mode. To prevent the "+++" from being misinterpreted as data, the following sequence should be followed:

1) Do not input any character within 1s or longer before inputting "+++".
2) Input "+++" within 1s, and no other characters can be inputted during the time.
3) Do not input any character within 1s after "+++" has been inputted.

When AT+QSMTPBODY is executed, the COM port will enter into data mode. All inputted data will be the body of email. If the inputted data reaches the <body_length> or the time reaches <input_time>, the port will exit from data mode automatically. If the inputted data is less than the <body_length>, customers can finish editing body by inputting "+++" or changing DTR level from low to high before <input_time> reaches. In such case, the COM port cannot reenter data mode by executing ATO command.

2 Description of SMTP AT Commands

2.1. AT+QSMTPCFG   Configure Parameters for SMTP Server

The command is used to configure SMTP server, user account and SSL settings. If the Write Command only executes one parameter, it will query the current settings.

AT+QSMTPCFG Configure Parameters for SMTP Server	
Test Command **AT+QSMTPCFG=?**	Response **+QSMTPCFG: "account",<username>,<password>** **+QSMTPCFG: "sender",<sender_name>,<sender_email>** **+QSMTPCFG: "smtpserver",<srvaddr>,<srvport>** **+QSMTPCFG: "contextid",(1-16)** **+QSMTPCFG: "sslctxid",(0-5)** **+QSMTPCFG: "ssltype",(0-2)** **OK**
Write Command **AT+QSMTPCFG="account"[,<username>,<password>]**	Response If <username> and <password> are not omitted: **OK** Or **+CME ERROR: <err>** If <username> and <password> are both omitted, query the current settings: **+QSMTPCFG: "account",<username>,<password>** **OK**
Write Command **AT+QSMTPCFG="sender"[,<sender_name>,<sender_email>]**	Response If <sender_name> and <sender_email> are not omitted: **OK** Or **+CME ERROR: <err>** If <sender_name> and <sender_email> are both omitted, query the current settings:

	+QSMTPCFG: "sender",<sender_name>,<sender_email> **OK**
Write Command **AT+QSMTPCFG="smtpserver"[,<srva ddr>,<srvport>]**	Response If <srvaddr> and <srvport> are not omitted: **OK** Or **+CME ERROR: <err>** If <srvaddr> and <srvport> are both omitted, query the current settings: **+QSMTPCFG: "smtpserver",<srvaddr>,<srvport>** **OK**
Write Command **AT+QSMTPCFG="contextid"[,<conte xtID>]**	Response If <contextID> is not omitted: **OK** Or **+CME ERROR: <err>** If <contextID> is omitted, query the current settings: **+QSMTPCFG: "contextid",<contextID>** **OK**
Write Command **AT+QSMTPCFG="sslctxid"[,<sslctxID >]**	Response If <sslctxID> is not omitted: **OK** Or **+CME ERROR: <err>** If <sslctxID> is omitted, query the current settings: **+QSMTPCFG: "sslctxid",<sslctxID>** **OK**
Write Command **AT+QSMTPCFG="ssltype"[,<ssltype>]**	Response If <ssltype> is not omitted: **OK** Or **+CME ERROR: <err>** If <ssltype> is omitted, query the current settings: **+QSMTPCFG: "ssltype",<ssltype>** **OK**

Parameter

<username>	String type. The user name for authentication. The maximum size of the parameter is 50 bytes.
<password>	String type. The password for authentication. The maximum size of the parameter is 50 bytes.
<sender_email>	String type. The email address of the sender. The maximum size of the parameter is 50 bytes.
<sender_name>	String type. The sender's name that will be shown when the recipients receiving the email. The maximum size of the parameter is 50 bytes.
<srvaddr>	String type. The IP address or domain name of the SMTP server. The maximum size of the parameter is 50 bytes.
<srvport>	Integer type. The port of the SMTP server. The default value is 25. It may be different depending on different SMTP server. For details, please query the corresponding mail service provider.
<contextID>	Integer type. The PDP context ID. The range is 1-16, and the default value is 1. It should be activated by AT+QIACT before sending an email. For details, please refer to *Quectel_EC2x&EG9x&EM05_TCP(IP)_AT_Commands_Manual*.
<sslctxID>	Integer type. SSL context ID used for SMTP. The range is 0-5, and the default value is 1. Customers should configure the SSL parameters by AT+QSSLCFG. For details, please refer to *Quectel_EC2x&EG9x&EM05_SSL_AT_Commands _Manual*.
<ssltype>	Integer type. Configure the SSL type. Please choose the SSL type according to the mail service provider, since some SMTP servers do not support sending email without SSL. 0 Without SSL 1 SSL 2 STARTTLS
<err>	Integer type. The error code of the operation. Please refer to **Chapter 5**.

2.2. AT+QSMTPDST   Add or Delete Recipients

AT+QSMTPDST=1 can be used to add recipients. The maximum number of recipients is 20, including CC recipients and BCC recipients. AT+QSMTPDST=0 can be used to delete all recipients.

AT+QSMTPDST Add or Delete Recipients	
Test Command **AT+QSMTPDST=?**	Response **+QSMTPDST: (0,1),(1-3),<emailaddr>** **OK**
Read Command **AT+QSMTPDST?**	Response **[+QSMTPDST: <type>,<emailaddr><CR><LF>]**

	OK
Write Command **AT+QSMTPDST=\<mode>[,\<type>[,\<e mailaddr>]]**	Response If the format is correct and it is not sending an email: **OK** Or **+CME ERROR: \<err>**

Parameter

\<mode>	Integer type. Add or delete recipients.
	0 Delete
	1 Add
\<type>	Integer type. The type of recipients.
	1 All recipients
	2 CC recipients
	3 BCC recipients
\<emailaddr>	String type. The email address of recipients. The maximum size of the parameter is 50 bytes.
\<err>	Integer type. The error code of the operation. Please refer to **Chapter 5**.

Example

//Add recipients.

AT+QSMTPDST=1,1,"quectel_test@aol.com"   //Add the recipient and the recipient type is 1 which means all recipients.

OK
AT+QSMTPDST=1,2,"quectel_test@21cn.com"   //Add the recipient and the recipient type is 2 which means CC recipients.

OK
AT+QSMTPDST?
+QSMTPDST: 1,"quectel_test@aol.com"
+QSMTPDST: 2,"quectel_test@21cn.com"

OK

//Delete all recipients.

AT+QSMTPDST=0   //Delete all recipients.
OK
AT+QSMTPDST?
OK

2.3. AT+QSMTPSUB   Edit the Subject of an Email

The command is used to edit the subject of an email. If <charset> is not ASCII, the inputted data should be the hex string of the original subject.

AT+QSMTPSUB Edit the Subject of an Email	
Test Command **AT+QSMTPSUB=?**	Response **+QSMTPSUB: (0-3),<subject>** **OK**
Read Command **AT+QSMTPSUB?**	Response **+QSMTPSUB: <charset>,<subject>** **OK**
Write Command **AT+QSMTPSUB=<charset>,<subject>**	Response **OK** Or **+CME ERROR: <err>**

Parameter

<charset>	Integer type. The character set of the subject.
	    0 ASCII
	    1 UTF-8
	    2 GB2312
	    3 BIG5

<subject>	String type. The subject of the email. If <charset> is 0, this string will be the subject of the email. Otherwise, it is formatted as a hex string, e.g. "41" means the hex value 0x41. If the character set is ASCII, the length of <subject > is 0-100 in unit of byte. If the character set is not ASCII, the length of <subject> should be even and the range is 0-200 in unit of byte.
<err>	Integer type. The error code of the operation. Please refer to **Chapter 5**.

Example

//Add subject for an email and the <charset> is ASCII.

AT+QSMTPSUB=0,"TEST SMTP"   //Edit subject and the character set is 0 which means ASCII.
OK
AT+QSMTPSUB?   //Query subject of the email.
+QSMTPSUB: 0,"TEST SMTP"

OK

//Add subject for email and the <charset> is UTF8. "7465737420534D5450" is the hex string of "TEST SMTP".

AT+QSMTPSUB=1,"746573742 0534D5450"   //Edit subject and the character set is 1 which means UTF8.

OK

AT+QSMTPSUB?   //Query subject of the email.

+QSMTPSUB: 1,"7465737420534D5450"

OK

2.4. AT+QSMTPBODY   Edit the Body of an Email

The command is used to edit the body of an email. When AT+QSMTPBODY is executed, the module will enter into data mode. All inputted data will be the body of email. If the inputted data reaches the <body_length> or the time reaches <input_time>, the module will exit from data mode automatically. If the inputted data is less than the <body_length>, customers can finish editing body by inputting "+++" or changing DTR level from low to high before <input_time> reaches. The maximum size of the email body is 10 Kbytes. The actual body length is the inputted data length.

AT+QSMTPBODY Edit the Body of an Email	
Test Command **AT+QSMTPBODY=?**	Response **+QSMTPBODY: (0-3),(1-10240),(1-65535)** **OK**
Read Command **AT+QSMTPBODY?**	Response **OK**
Write Command **AT+QSMTPBODY=<charset>,<body_length>[,<input_time>]**	Response If the format is correct and it is not sending an email: **CONNECT** <Input body data> **+QSMTPBODY: <input_length>** **OK** If there is any error, response: **+CME ERROR: <err>**

Parameter

<charset>   Integer type. The character set of the body.
          0   ASCII

	1	UTF-8
	2	GB2312
	3	BIG5

<body_length>	Integer type. The specific length of body. If the length of inputted data is less than the specific value <body_length>, customers can exit from data mode by "+++". The actual length of the body is the inputted data length. The range is 1-10240. Unit: byte.
<input_length>	The actual length of the inputted body.
<input_time>	Integer type. The maximum time to upload email body from COM port. The range is 1-65535, and the default value is 90. Unit: second.
<err>	Integer type. The error code of the operation. Please refer to *Chapter 5*.

Example

//Edit email body and the body length is 100 bytes.

AT+QSMTPBODY=0,100,120   //Edit email body. The character set is 0 which means ASCII, and the maximum input length is 100 bytes and the maximum input time is 120s.

CONNECT
<Input 100 bytes data>   //Input 100 bytes data.
+QSMTPBODY: 100

OK

//If the actual inputted data is less than the specified length, customers can stop editing the body by inputting "+++".

AT+QSMTPBODY=0,100,120   //Edit email body. The character set is 0 which means ASCII, and the maximum input length is 100 bytes and the maximum input time is 120s.

CONNECT
<Input 90 bytes data>
                              //Input "+++".
+QSMTPBODY: 90

OK

//If the actual inputted data is less than specified length and the maximum input time expires, the module will end the editing of body automatically.

AT+QSMTPBODY=0,100,120   //Edit email body. The character set is 0 which means ASCII, and the maximum input length is 100 bytes and the maximum input time is 120s.

CONNECT
<Input 90 bytes data>
                              //120s later.

+QSMTPBODY: 90

OK

2.5. AT+QSMTPATT   Add or Delete Attachments for an Email

Attachments for email can be added by AT+QSMTPATT=1. When adding an attachment, the file index should be specified. As a result, different attachments should have different file index. The maximum number of attachments is 10.

The attachments can be RAM, UFS or SD files (RAM files are strongly recommended). Files can be uploaded to RAM, UFS or SD card by AT+QFUPL. After sending the email successfully, the files in RAM, UFS or SD card should be deleted by AT+QFDEL. For more details of these commands, please refer to *Quectel_EC2x&EG9x&EM05_FILE_AT_Commands_Manual*. The mail service provider may have some restriction on single file size and total size.

AT+QSMTPATT=0 can be used to delete all attachments.

AT+QSMTPATT Add or Delete Attachments for an Email	
Test Command **AT+QSMTPATT=?**	Response **+QSMTPATT: (0,1),(1-10),<file_name>** **OK**
Read Command **AT+QSMTPATT?**	Response **[+QSMTPATT:** **<file_index>,<file_name>,<file_size><CR><LF>]** **OK**
Write Command **AT+QSMTPATT=<mode>[,<file_index>,<file_name>]**	Response **OK** Or **+CME ERROR: <err>**

Parameter

<mode>	Integer type. Add or delete the attachment. 　　0　　Delete 　　1　　Add
<file_index>	Integer type. The index of the attachment. The range is 1-10.
<file_name>	String type. The file name of the attachment to be added. The maximum size of the parameter is 50 bytes.

<file_size>	Integer type. The size of the attachment. Unit: byte.
<err>	Integer type. The error code of the operation. Please refer to **Chapter 5**.

Example

//Customers can add attachments from RAM. After the email is sent, the file uploaded to RAM should be deleted by AT+QFDEL. The detailed example is shown as follows:

AT+QFUPL="RAM:test.txt",200,300,1   //Upload a file to RAM. The file will be saved as "*test.txt*" and the maximum size of file is 200 bytes. 300 indicates timeout, and 1 indicates ACK mode. For details, please refer to *Quectel_EC2x&EG9x&EM05_FILE_AT_ Commands_Manual*.

CONNECT
<Input 200 bytes data>
+QFUPL: 200,707

OK
AT+QFLST="RAM:*"
+QFLST: "RAM:test.txt",200

OK
AT+QSMTPATT=1,1,"RAM:test.txt"   //Add an attachment for email and the file index is 1.
OK
AT+QSMTPATT?   //Query the attachments.
+QSMTPATT: 1,"RAM:test.txt",200

OK

//Delete all attachments.

AT+QSMTPATT=0   //Delete all attachments for the email.
OK
AT+QSMTPATT?   //Query the attachments.
OK

2.6. AT+QSMTPCLR   Clear the Content of an Email

AT+QSMTPCLR will clear all the configurations of AT+QSMTPDST, AT+QSMTPSUB, AT+QSMTPBODY and AT+QSMTPATT.

AT+QSMTPCLR Clear the Content of an Email	
Test Command **AT+QSMTPCLR=?**	Response **OK**
Execution Command **AT+QSMTPCLR**	Response **OK** Or **+CME ERROR: <err>**

Parameter

<err>	Integer type. The error code of the operation. Please refer to ***Chapter 5***.

Example

AT+QSMTPCLR	//Clear the recipients, subject, body and attachments for the email.
OK	
AT+QSMTPDST?	//Query the recipients of the email.
OK	
AT+QSMTPSUB?	//Query the subject of the email.
+QSMTPSUB: 0,""	
OK	
AT+QSMTPATT?	//Query the attachments of the email.
OK	

2.7. AT+QSMTPPUT   Send an Email

It may take some time for an email to be completely sent, which depends on the total size of attachments and network status. Customers should not send email again before receiving "+QSMTPPUT: <err>,<protocol_error>" which indicates the ending of sending an email. If <err> is not 0, the email can be resent by executing AT+QSMTPPUT=<timeout> directly.

AT+QSMTPPUT Send an Email	
Test Command **AT+QSMTPPUT=?**	Response **+QSMTPPUT: (60-65535)** **OK**
Write Command	Response

AT+QSMTPPUT=<timeout>	If the format is correct and it is not sending an email: **OK** **+QSMTPPUT: <err>,<protocol_error>** If there is any error, response: **+CME ERROR: <err>**

Parameter

<timeout>	Integer type. The maximum time to send an email. The range is 60-65535. Unit: second.
<err>	Integer type. The error code of the operation. Please refer to *Chapter 5*. If it is 0, it means the operation is successful.
<protocol_error>	Integer type. For reference only. Indicates the original error code from SMTP server which is defined in SMTP protocol. For details, please refer to *Chapter 6*. If it is 0, it is invalid.

Example

AT+QSMTPPUT=300	//Send the email and the maximum time is 300s.
OK	
+QSMTPPUT: 0,0	//The email has been sent successfully. If <err> is not 0, the email can be resent by executing AT+QSMTPPUT=<timeout> directly.

3 Examples

3.1. Send an Email without SSL

Sending an email without SSL means that SSL function will not be used, and the email will be sent with insecure connection. For example:

//Step 1: Configure and activate the PDP context.

AT+QICSGP=1,1,"UNINET","","",1   //Configure PDP context 1. APN is "UNINET" for China Unicom.

OK
AT+QIACT=1   //Activate PDP context 1.
OK   //Activated successfully.
AT+QIACT?   //Query the state of PDP context.
+QIACT: 1,1,1,"10.7.157.1"

OK
AT+QSMTPCFG="contextid",1   //Set the PDP context ID as 1. The PDP context ID must be activated first.

OK

//Step 2: Configure SMTP server and user account.

AT+QSMTPCFG="ssltype",0   //Set the SSL type as without SSL for SMTP. In this case, SSL function will not be used, and emails will be sent with insecure connection.

AT+QSMTPCFG="smtpserver","smtp.163.com",25   //Set the IP address or domain name and port of SMTP server. The port of SMTP server depends on mail service provider.

OK
AT+QSMTPCFG="account","sishen664551","wq664551" //Set username and password.
OK
AT+QSMTPCFG="sender","sishen664551","sishen664551@163.com" //Set sender name and sender address. The sender name will be shown when the email is received.

OK

//Step 3: Edit the email content.

AT+QSMTPDST=1,1,"quectel_test@163.com"　　//Add the recipient and the recipient type is 1 which means all recipients.

OK

AT+QSMTPDST=1,2,"quectel_test@21cn.com"　　//Add the recipient and the recipient type is 2 which means CC recipients.

OK
AT+QSMTPDST?
+QSMTPDST: 1,"quectel_test@163.com"
+QSMTPDST: 2,"quectel_test@21cn.com"

OK
AT+QSMTPSUB=0,"TEST SMTP"　　//Edit subject and the character set is 0 which means ASCII.

OK
AT+QSMTPSUB?　　//Query the subject of email.
+QSMTPSUB: 0,"TEST SMTP"

OK
AT+QSMTPBODY=0,100,120　　//Edit email body. The character set is 0 which means ASCII. The maximum input length is 100 bytes and the maximum input time is 120s.

CONNECT
<Input 100 bytes data>
+QSMTPBODY: 100

OK
AT+QFUPL="RAM:smtp1.txt",100,200,1　　//Upload a file to RAM. The file will be saved as "*smtp1.txt*" and the maximum size of file is 100 bytes. 200 indicates timeout, and 1 indicates ACK mode. Please refer to *Quectel_ EC2x&EG9x&EM05_FILE_AT_Commands_ Manual* for more details.

CONNECT
<Input 100 bytes data>
+QFUPL: 100,707

OK
AT+QFLST="RAM:*"
+QFLST: "RAM:smtp1.txt",100

OK
AT+QSMTPATT=1,1,"RAM:smtp1.txt"　　//Add an attachment for email and the file index is 1.

```
OK
AT+QSMTPATT?                              //Query the attachment.
+QSMTPATT: 1,"RAM:smtp1.txt",100

OK

//Step 4: Send the email.

AT+QSMTPPUT=300                          //Send the email and the maximum time is 300s.
OK

//It may take a few minutes.

+QSMTPPUT: 0,0                           //Send email successfully. If <err> is not 0, then the
                                           email   can   be   resent   by   executing
                                           AT+QSMTPPUT=<timeout> directly.

//Step 5: Clear the email content and deactivate the PDP context.

AT+QSMTPCLR                              //Clear recipients, subject, body and attachments.
OK
AT+QFDEL="RAM:smtp.txt"                  //Delete the file as attachment.
OK

//Customers can repeat Step 3 and Step 4 to re-send emails. Of course, you can also repeat Step 2 to
Step 4 to re-send emails.

AT+QIDEACT=1                            //Deactivate the PDP context which is activated for
                                          SMTP.

OK
```

3.2. Send an Email with SSL

Sending an email with SSL means that emails will be sent over SSL/TLS encrypted SMTP. The port of SMTP server depends on the mail service provider, and it is the port 465 or 587 usually. As compared with sending email without SSL, sending email over SSL additionally needs SMTP server and user account configuration.

```
//Configure SSL type.

AT+QSMTPCFG="ssltype",1                  //Set the SSL type as 1, which means emails
                                           will be sent over SSL.

OK
AT+QSMTPCFG="sslctxid",1                 //Choose SSL context 1 for SMTP.
OK
AT+QSSLCFG="ciphersuite",1,0xffff        //Configure SSL cipher suite type as 0xffff,
                                           which means all cipher suite types will be
```

supported.

OK
AT+QSSLCFG="seclevel",1,0   //Configure SSL security level as 0 which
                                                                     means the SSL CA certificate is not
                                                                     needed.

OK
AT+QSSLCFG="sslversion",1,1   //Configure SSL version as 1 which means
                                                                     TLS1.0.

OK

//Configure SMTP server.

AT+QSMTPCFG="smtpserver","smtp.163.com",25   //Set SMTP server address and port.
OK

//As the SMTP server is different, the account information will be different as well. As an example, the
following information is provided.

AT+QSMTPCFG="account","sishen664551","wq664551"   //Set username and password.
OK
AT+QSMTPCFG="sender","sishen664551","sishen664551@163.com" //Set sender name and sender
                                                                     address.

OK

3.3. Send an Email with STARTTLS

Sending an email with STARTTLS means that the normal insecure connection will be upgraded to secure
one through STARTTLS function, thus for sending the mail data. In this case, there is also a need for
SMTP server and user account configuration. The port of SMTP server depends on the mail service
provider, and it is the port 25, 465 or 587 usually.

//Configure SSL type.

AT+QSMTPCFG="ssltype",2   //Set the SSL type as 2, which means emails will be
                                                                     sent over STARTTLS.

OK
AT+QSMTPCFG="sslctxid",1   //Choose SSL context 1 for SMTP.
OK
AT+QSSLCFG="ciphersuite",1, 0xffff   //Configure SSL cipher suite type as 0xffff, which means
                                                                     all cipher suite types will be supported.
OK
AT+QSSLCFG="seclevel",1,0   //Configure SSL security level as 0, which means the
                                                                     SSL CA cert is not needed.

OK
AT+QSSLCFG="sslversion",1,1   //Configure SSL version as 1 which means TLS1.0.

OK

//Configure SMTP server.

AT+QSMTPCFG="smtpserver","smtp.163.com",25   //Set SMTP server address and port.

OK

//As the SMTP server is different, the account information will be different as well. As an example, the following information is provided.

AT+QSMTPCFG="account","sishen664551","wq664551"   //Set username and
                                                                                                     password.

OK

AT+QSMTPCFG="sender","sishen664551","sishen664551@163.com"   //Set sender name and
                                                                                                     sender address.

OK

4 Error Handling

4.1. Executing SMTP AT Command Fails

When executing SMTP AT commands, if response "ERROR" is received from the module, please check whether the (U)SIM card is inserted, and whether it is "+CPIN: READY" returned when executing AT+CPIN?.

4.2. PDP Activation Fails

If it is failed to activate a PDP context by AT+QIACT command, please check the following configurations:

1. Query whether the PS domain is attached or not by AT+CGATT? command. If not, please execute AT+CGATT=1 to attach PS domain.
2. Query the PS domain status by AT+CGREG? command and make sure the PS domain has been registered.
3. Query the PDP context parameters by AT+QICSGP command and make sure the APN of specified PDP context has been set.
4. Make sure the specified PDP context ID is neither used by PPP nor activated by AT+CGACT command.
5. According to 3GPP specifications, the module only supports three PDP contexts activated simultaneously, so customers must make sure the number of activated PDP contexts is less than 3.

If all above configurations are correct, but activating the PDP context by AT+QIACT command still fails, please reboot the module to resolve this issue. After rebooting the module, please check the configurations mentioned above for at least three times and each time at an interval of 10 minutes to avoid frequently rebooting the module.

4.3. DNS Parse Fails

When executing AT+QSMTPPUT command, if "+QSMTPPUT: 653,0" is returned, please check the following aspects:

1. Make sure the domain name of SMTP server is valid.
2. Query the status of PDP context by AT+QIACT? command to make sure the specified PDP context has been activated successfully.

4.4. Error Response of AT+QSMTPPUT

"+QSMTPPUT: <err>,<protocol_error>" will be returned after executing AT+QSMTPPUT.

If <err> is not 0, it indicates the sending is failed. Please resend the email. If resending is not successful, please deactivate the PDP context by AT+QIDEACT and re-activate the PDP context by AT+QIACT to resolve this issue. If activating the PDP context fails, please refer to **Chapter 4.2** to resolve it.

If the <protocol_error> is not 0, it indicates the error code replied from SMTP server. Customers can check the issue depending on the protocol error code. For example, if <protocol_error> is 535 (authentication failed), it indicates <username> or <password> may be wrong. If <protocol_error> is 530 (access denied), it means the emails are sent too often, and the SMTP server rejects to post the emails. For more details, please refer to *RFC2821* (Simple Mail Transfer Protocol).

5 Summary of Error Codes

The error code <err> indicates an error related to mobile equipment or network. The details about <err> are described in the following table.

Table 1: Summary of Error Codes

<err>	Meaning
651	Unknown error
652	The SMTP server is busy, such as uploading the body or sending an email.
653	Failed to get IP address according to the domain name.
654	Network error, such as failed to activate GPRS/CSD context, failed to establish the TCP connection with the SMTP server or failed to send an email to the SMTP server, etc.
655	Unsupported authentication type
656	The connection for the SMTP server is closed by peer.
657	GPRS/CSD context is deactivated.
658	Timeout
659	No recipient for the SMTP server
660	Failed to send an email
661	Failed to open a file
662	No enough memory for the attachment
663	Failed to save the attachment
664	The input parameter is wrong
665	SSL authentication failed
666	Service not available, closing transmission channel

667	Requested mail action not taken: mailbox unavailable
668	Requested action aborted: local error in processing
669	Requested action not taken: insufficient system storage
670	Syntax error, command unrecognized
671	Syntax error in parameters or arguments
672	Command not implemented
673	Bad sequence of commands
674	Command parameter not implemented
675	<domain> does not accept mail (see *RFC1846*)
676	Access denied
677	Authentication failed
678	Requested action not taken: mailbox unavailable
679	User not local; please try <forward-path>
680	Requested mail action aborted: exceeded storage allocation
681	Requested action not taken: mailbox name not allowed
682	Transaction failed

6 Summary of SMTP Protocol Error Codes

The protocol error code <protocol_error> indicates an error replied from SMTP server. Please refer to *RFC2821* (Simple Mail Transfer Protocol). The details about <protocol_error> are described in the following table.

Table 2: Summary of SMTP Protocol Error Codes

<protocol_error>	Meaning
421	Service not available, closing transmission channel
450	Requested mail action not taken: mailbox unavailable
451	Requested action aborted: local error in processing
452	Requested action not taken: insufficient system storage
500	Syntax error, command unrecognized
501	Syntax error in parameters or arguments
502	Command not implemented
503	Bad sequence of commands
504	Command parameter not implemented
521	<domain> does not accept mail (see *RFC1846*)
530	Access denied
535	Authentication failed
550	Requested action not taken: mailbox unavailable
551	User not local; please try <forward-path>
552	Requested mail action aborted: exceeded storage allocation

553	Requested action not taken: mailbox name not allowed
554	Transaction failed

7 Appendix A References

Table 3: Related Documents

SN	Document Name	Remark
[1]	RFC2821	Simple Mail Transfer Protocol
[2]	RFC3207	SMTP service extension for secure SMTP over transport layer security
[3]	Quectel_EC2x&EG9x&EM05_TCP(IP)_AT_Commands_Manual	Introduction about EC2x&EG9x&EM05 TCP/IP AT commands
[4]	Quectel_EC2x&EG9x&EM05_FILE_AT_Commands_Manual	EC2x&EG9x&EM05 FILE application note
[5]	Quectel_EC25&EC21_AT_Commands_Manual	EC25&EC21 AT commands manual
[6]	Quectel_EG9x_AT_Commands_Manual	EG9x AT commands manual
[7]	Quectel_EM05_AT_Commands_Manual	EM05 AT commands manual
[8]	Quectel_EC2x&EG9x&EM05_SSL_AT_Commands_Manual	Introduction about EC2x&EG9x&EM05 SSL AT commands

Table 4: Terms and Abbreviations

Abbreviation	Description
BCC	Blind Carbon Copy
CC	Carbon Copy
DNS	Domain Name Server
DTR	Data Terminal Ready
PDP	Packet Data Protocol
PPP	Point-to-Point Protocol
SMTP	Simple Mail Transfer Protocol

SSL	Security Socket Layer
TLS	Transport Layer Security